CLAIMS

1. A method for injecting carbon dioxide into a pressurized transferring gaseous medium to be treated present inside a chamber from liquid carbon dioxide, characterized in that it comprises the following steps:
- converting liquid carbon dioxide into two-phase "gas + solid" carbon dioxide by means of a direct expansion device,
- injecting the two-phase carbon dioxide so formed into the gaseous medium to be treated with the aid of an injector tapped into the wall of the chamber containing said pressurized transferring gaseous medium to be treated,
and in that it includes a step of injecting an inerting gas into the carbon dioxide between the direct expansion device and the injector.

2. The method as claimed in claim 1, characterized in that the two-phase carbon dioxide is injected so that it is injected into the core of the gaseous medium and distributed partly cocurrently and partly countercurrently to the gas stream.

3. The method as claimed in either of claims 1 and 2, characterized in that the inerting gas is carbon dioxide coming from the vaporization of a fraction of the available liquid carbon dioxide, and drawn off upstream of the expansion device.

4. The method as claimed in one of claims 1 to 3, characterized in that the quantity of carbon dioxide injected into the gaseous medium to be treated is regulated in relation to to a set value of a physical or chemical parameter to be attained, measured in the gaseous medium, downstream from the injection point.

5. A method for enriching a gas stream with carbon dioxide from liquid carbon dioxide.

6. The method as claimed in claim 5, characterized in that it comprises the following steps:

- converting liquid carbon dioxide into two-phase "gas + solid" carbon dioxide by means of a direct expansion device;

- injecting the two-phase carbon dioxide so formed into the gas stream to be enriched with the aid of an injector tapped into the wall of the chamber containing said gas stream to be enriched;

and in that it includes a step of injecting an inerting gas into the carbon dioxide between the direct expansion device and the injector.

7. A carbon dioxide injection device for implementing the method of one of claims 1 to 6, characterized in that it comprises:

- a variable-flow expansion valve and a corresponding injector tapped into a wall of the chamber and penetrating into the core of the gaseous medium;

- a T-piece connected in the upper part to the ejector of the expansion valve, on the side to a gas feed and connected in the lower part to the injector tapped into said wall;

- means for feeding the expansion valve with liquid carbon dioxide; and

- means for feeding the T-piece with inerting gas.

8. The device as claimed in claim 7, characterized in that the end of the injector consists of:

- a deflector with two slopes distributing the two-phase CO_2 partly countercurrently and partly cocurrently to the gas stream; and

- two exhaust openings for ejecting the two-phase CO_2, arranged so as to distribute the mixture in the axis of transfer of the gas stream.

9. The device as claimed in either of claims 7 and 8, characterized in that the injector enters the chamber over a length equivalent to half the width of said chamber.

10. The device as claimed in one of claims 7 to 9, characterized in that it includes, for feeding the injection device with inerting gas, upstream of the cryogenic expansion device, means for drawing off and vaporizing a fraction of the available liquid carbon dioxide.

11. The application of the method as claimed in either of claims 5 and 6 for producing calcium carbonate.